

## REMARKS

This reply encompasses a bona fide attempt to address the rejections raised by the Examiner and presents amendments as well as reasons why the applicants believe that the claimed invention is novel and unobvious over the closest prior art of record, thereby placing the present application in a condition for allowance.

### *Regarding Claim Status*

Claims 1-19 were examined. Claims 1-19 were rejected. Claims 1, 9, and 18 are amended herein. No new matter is introduced by these amendments. Claims 5 and 12 are cancelled herein. By this Amendment, claims 1-4, 6-11, and 13-19 are pending.

### *Regarding Information Disclosure Statement*

The Examiner has stated that the information disclosure statement filed 11/27/2002 fails to comply with 37 CFR 1.98(a)(2). A new IDS is being supplied with this response.

### *Regarding 35 U.S.C. § 102 Rejections*

Claims 1-4 and 6-8 were rejected under 35 U.S.C. § 102(e) as being anticipated by Parker et al (US Patent 6,674,894). The Examiner states that Parker et al describes determining adjacent points or boundary pairs in a view plane that are also described to define a vessel, determining intensity of neighboring points or boundary pairs to determine if the neighboring points are in a vessel, and viewing in the projection path along each projection path of the multi-dimensional image a plurality of adjacent points or boundary pairs. Applicants respectfully submit that Parker et al teaches determining and viewing adjacent or neighboring points, not boundary pairs, and that adjacent points and boundary pairs are not equivalent. Boundary pairs are described in the instant specification in Figure 2, and page 9, line 15 to

page 10, line 2. As can be seen from Figure 2, the points included in the boundary pairs are not generally adjacent. Rather, they are two points that together define the boundaries of a vessel. In contrast, two adjacent points could not define the boundaries of a vessel except in the specific circumstance where the vessel was 2 voxels thick. Claim 1 has been particularly amended herein to more clearly point out the non-adjacent nature of boundary points. Support for this amendment can be found in the specification as filed on page 12, lines 11-13. (This sentence refers to a minimum slab thickness of 4 voxels. If each boundary point is considered a voxel, this corresponds to two voxels that are at least two voxels apart.) It is therefore respectfully submitted that amended claim 1 is novel over Parker et al and should be allowed. As claims 2-4 and claims 6-8 are dependent on amended claim 1, applicants respectfully submit that claims 2-4 and claims 6-8 should also be allowed.

*Regarding 35 U.S.C. § 103 Rejections*

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Parker et al. Claim 5 has been cancelled herein, rendering the rejection moot.

Claims 9-19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Parker et al in view of Frangi et al (Model-based Quantitation of 3-D Magnetic Resonance Angiographic Images, 1999). The Examiner states that Parker et al teaches all the limitations of claims 9-19 except for the limitation of claim 9, which describes selecting a starting point and an end-point encompassing the structure of interest in a plane of said image. Applicants respectfully submit that this is not the case. As discussed above, Parker et al teaches the use of adjacent or neighboring points, not boundary pairs. Claims 9 and 18 have been particularly amended herein to more clearly point out the non-adjacent nature of boundary pairs. Support for these

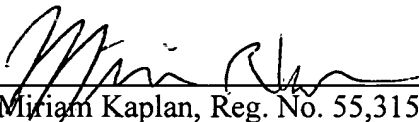
amendments can be found in the specification as filed on page 12, lines 11-13. Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to modify the teachings of Parker et al or Parker et al in combination with Frangi et al to use boundary points rather than two adjacent or neighboring points to define the boundaries of a structure, as neighboring points could only define a boundary pair in the case of a 2-voxel deep structure. Thus, applicants respectfully submit that amended claims 9 and 18 are not obvious from the combination of Parker et al and Frangi et al. As claims 10-11, 13-17 and 19 are dependent on amended claims 9 and 18, applicants respectfully submit that claims 10-11, 13-17 and 19 should also be allowed.

### *Conclusion*

For the foregoing reasons, it is respectfully submitted that the invention as set forth in amended independent claims 1, 9, and 18 and recites subject matter that is novel, under 35 U.S.C. § 102(e), over Parker et al and patentably distinct, under 35 U.S.C. § 103(a), from Parker et al and Frangi et al. Accordingly, amended claims 1, 9, and 18 are submitted to be patentable and therefore should be allowed. Claims 2-4 and 6-8, 10-11 and 13-17, and 19 are submitted to be patentable as they are dependent on independent claims 1, 9, and 18 respectively.

This Reply is submitted to be complete and proper in that it places the present application in a condition for allowance without adding new matter. Favorable consideration and a Notice of Allowance of all pending claims 1-4 and 5-11, and 13-19 are therefore respectfully solicited.

Respectfully submitted,



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